CLAIMS

1. A radio equipment system having a modular structure, the system comprising:

a baseband modem;

a digital interface; and

a radio frequency unit including radio frequency control means and radio frequency parts means,

wherein the baseband modem and the radio frequency unit respectively form physically separate modules which are connected with each other by the digital interface.

2. The system according to claim 1, wherein the module forming the baseband modem comprises:

correction means for performing forward error correction coding and decoding; and

symbol mapping means for symbol mapping and demapping.

3. The system according to claim 1, wherein the radio frequency control means comprises respective control loops for pulse shape filtering, transmitter and receiver correction loops, timing recovery means for performing receiver timing recovery, and carrier recovery means for performing carrier timing recovery.

4. The system according to claim 3, wherein the transmitter and receiver correction loops comprise quadratic error correction means for performing quadratic error correction, balance error correction means for performing balance error correction, bias error correction means for performing bias error correction, and a gain error correction means for performing bias error correction.

5. The system according to claim 3, wherein the control loops are independent of the modulation or traffic type.

6. A method of running a radio equipment, said method comprising:

providing a radio equipment comprising physically separate modules of a baseband modem and a radio frequency unit including radio frequency control means and radio frequency parts means; and

providing a digital interface for connection of the baseband modem module and the radio frequency unit module with each other within the radio equipment.

7. The method according to claim 6, further comprising:

sending, from the baseband modem module to the radio frequency unit module, transmitter data including in-phase component signals and quadratic phase component signals;

sending, from the baseband modem module to the radio frequency unit module, transmitter clock signals;

sending, from the baseband modem module to the radio frequency unit module, control signals providing support for type-specific functionalities;

sending, from the radio frequency unit module to the baseband modem module, receiver clock signals;

sending, from the radio frequency unit module to the baseband modem module, receiver data including in-phase component signals and quadratic phase component signals; and

exchanging, between the radio frequency unit module and the baseband modem module, microprocessor signals;

wherein said sending steps and said exchanging step are driven by the digital interface.

8. The method according to claim 7, said method further

comprising providing all signals as digital signals, and wherein a clock rate is provided as a system symbol clock rate, except for a case that a function in the modem utilizes two samples per symbol where a double symbol rate frequency is supported.

9. The method according to claim 6, further comprising the steps of:

forward error correction coding and decoding;

symbol mapping and demapping; and

implementing the forward error correction coding and decoding and symbol mapping and demapping steps in the baseband modem.

10. The method system according to claim 6, wherein the radio frequency control means within the module forming the radio frequency unit includes respective control loops performing pulse shape filtering, transmitter and receiver correction, receiver timing recovery and carrier recovery.

11. The method according to claim 10, wherein the transmitter and receiver correction comprises a quadratic error correction, a balance error correction, a bias error correction, and a gain error correction.

12. The method according to claim 10, wherein the control loops perform independently of the modulation or traffic type.

13. A digital interface for connecting a baseband modem module with a radio frequency unit module within a radio equipment, wherein the baseband modem module and the radio frequency unit module are physically separated, and wherein the interface is configured to perform the signal

exchange between the modules.

14. The interface according to claim 13, wherein the signals are exchanged serially.

15. The interface according to claim 13, wherein the signals are exchanged in parallel.

16. The interface according to claim 13, further comprising:

first sending means for sending, from the baseband modem module to the radio frequency unit module, transmitter data including in-phase component signals and quadratic phase component signals;

second sending means for sending, from the baseband modem module to the radio frequency unit module, transmitter clock signals;

third sending means for sending, from the baseband modem module to the radio frequency unit module, control signals providing support for type-specific functionalities;

fourth sending means for sending, from the radio frequency unit module to the baseband modem module, receiver clock signals;

fifth sending means for sending, from the radio frequency unit module to the baseband modem module, receiver data including in-phase component signals and quadratic phase component signals; and

exchanging means for exchanging, between the radio frequency unit module and the baseband modem module, microprocessor signals.